Cyanide Chips

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TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION
EPA CONTRACT 68-01-6669

Mr. Robert Bowden, Chief
Spill Response Section
Environmental Protection Agency
536 South Clark Street
Chicago, IL 60604

20 October 1983

TAT-5-8310-05

Dear Mr. Bowden:

On 14 and 17 October 1983, officers from the Illinois Department of Law Enforcement, Division of State Police, and TAT member Stofferahn conducted inspections of six sites in the Chicago area being used to store cyanide contaminated film chips. These visits were made to assess the structural integrity of the semi-trailer vans which are holding the waste.

U.S. EPA Region V Remedial Response Branch has reportedly initiated efforts to conduct a Removal Action of the chips, which were generated by Film Recovery Systems, Inc., of Elk Grove Village, Illinois. However, the removal of the waste from the sites under this Action is not anticipated to begin for several months. As such, these assessments were conducted in order to determine which of the trailers are in danger of collapse and/or loss of structural integrity to the point where chips can leak from the units, during the upcoming winter. Special attention was also paid to congestion or access problems regarding the trailers containing waste.

The trailers were placed into one of four categories at the time of their inspection. These categories are:

- o Structurally sound, not leaking;
- o Structurally sound, leaking/seeping leachate;
- o Structurally unsound, but repairable;
- o Structurally unsound, in danger of collapse or leakage of waste.

It should be noted that the categorization of these trailers by a parameter of potential structural collapse is inherently subjective, and further complicated by the inability to examine the inside of the units, particularly the floors and bottom seams. Also, the leachate generated by the waste is basic and corrodes aluminum. As the rate of corrosion is variable, dependent among other things upon quality of leachate, temperature, moisture and oxygen conditions inside the trailers, assessment of future damage is even further complicated. The results that were obtained, however, are felt to provide an adequate guide to an Emergency Action which TAT recommends be initiated prior to the onset of winter. These recommendations are provided later in this report.

SITE ASSESSMENTS

On 14 October 1983, TAT member Stofferahn met with Troopers Koch and DeLacy at District Three Headquarters of the Illinois State Police, 4051 N. Harlem Avenue, Chicago. After a brief explanation as to what the site assessments were to involve, the troopers and TAT proceeded to the Red Devil Manufacturing facility at 5995 North River Road, Rosemont, Illinois (Figure 1). Twenty-nine trailers were numbered with spray paint and categorized. The results of the assessment are given in Table 1. Trailer three was found to contain no waste chips. All other trailers were noted to be leaking or seeping leachate to some extent. Five trailers, numbers 13, 15, 18, 27 and 28, were recommended by the officers to be offloaded. The trailers are confined to a small bermed area, and little room to access the majority of the trailers exists. A small asphalt lot was noted across the street from the site which could potentially be used to temporarily store the structurally sound units while the others are being repaired or off-loaded. No information as to the owner of this lot was available at this time.

From the Rosemont site, the troopers and TAT proceeded to the abandoned Aldens warehouse site at 5000 W. Roosevelt, Chicago (Figures 2 and 3). Thirty-seven trailers containing chips were numbered with indelible markers. Twenty-seven of these trailers contain chips which were treated with sodium hypochlorite solution by Petrochem Services, Inc., during a state-funded Emergency Action this last summer. Recent analyses, however, have shown these chips still contain significant levels of cyanide and were included in the assessment. The results of the assessment are given in Table 2. Again, all the trailers showed signs of leakage or seepage of leachate (as the weather as been relatively dry prior to the site visits, most of the trailers at this and the Rosemont site were not actively leaking, but showed definite signs of past leakage). The troopers recommended that ten trailers, numbers 2, 3, 5, 11, 17, 30, 32, 33, 34 and 35, should be off-loaded. The trailers are situated on a

large parking lot of several acres in size behind the abandoned warehouse. No access or congestion problems exist.

During the assessment of the Rosemont and Chicago site, the troopers indicated which trailers they felt should be off-loaded. The remaining trailers were not assessed as to the structural soundness of the entire unit. Those items on each trailer which were felt to be in need of repair were, however, noted. As such, TAT has included the vast majority of these into the repairable category, although they may be structurally sound. Most of the repairs indicated are minor, involving tarring corroded seams or reinforcing doors or floor boards, and should be made to ensure that chips do not leak from the units.

On 17 October 1983, TAT member Stofferahn met with Sargent Underwood and Troopers Zipsie and Patterson from District Four State Police Headquarters (13863 S. Cicero, Crestwood, Illinois) at the Gemini Leasing yard, 6021 S. East Avenue, Hodgkins, Illinois (Figure 4). The Gemini Leasing yard is an active facility. Twenty-six trailers containing waste chips located here were numbered with indelible markers. The results of the assessment of these trailers are given in Table 3. Most of the trailers were leaking; some were without jack stands. Nine trailers, numbers 11, 12, 14, 17, 19, 22, 23, 25 and 26, were recommended for offloading by the troopers. While gaining access to the twenty-six trailers will require only a minimal amount of movement of other units on the yard, acquiring room for repairs and offloading will be a problem due to the fact that this is an active place of business. The owner of the yard, who TAT met briefly during the site visit, complained that the waste trailers were taking up space on his yard which he could be utilizing for paying customers. The addition of ten more trailers, or several roll-off boxes, to store the chips from the ten unsound units is not anticipated to elicit a favorable response from Gemini officials.

The next site assessed was J's Mobile Semi-Trailer Repair yard at 8765 W. Joliet Road, McCook, Illinois (Figure 5). Fourteen trailers located here were numbered and assessed. The results of the assessment are given in Table 4. Leakage of leachate from these trailers had been found to be migrating off site via a storm sewer by personnel from the Metropolitan Sanitary District of Greater Chicago (MSD) in September of 1983. Four trailers, numbers 1, 3, 6 and 7, were recommended to be offloaded. As with the Gemini Leasing yard, this is an active trailer yard. Access to the waste trailers is not anticipated to be a serious problem; however, finding enough room for repairs and offloading is.

The Eagles Trailer yard at 7710 W. 57th Street, Summit, Illinois (Figure 6), was the next site visited. Twenty-seven trailers containing waste were numbered and assessed. The results of the assessment are given in Table 5. As with the J's site, off-site migration of cyanide via a drainage ditch along the southern parameter of the site was documented by the MSD last September. Three units, numbers 2, 4 and 16, were recommended for off-loading. A considerable access and congestion problem was noted at this site. There is a totally inadequate amount of space within the area where the trailers are parked for any amount of work to be done. The trailer repair yard to the north is active, and cannot be used. The paved area leading to Archer Avenue could be used for temporary storage of sound units. To the northeast, TAT noticed a very large paved parking lot and what appeared to be abandoned buildings. This lot could also potentially be utilized for temporary storage or working space. An Eagle's employee stated this facility was owned by Ryder P.I.E., and supplied TAT with a business card for a contact with the firm (Attachment 1).

The Livco trailer yard at 6700 W. 130rd Street, Chicago Ridge, Illinois, (Figure 7), was the last site visited. Eighteen trailers containing waste were numbered and inspected at this facility. Table 6 provides the results of this assessment. All the units were leaking or seeping leachate, but only one, number 55, was recommended for offloading. While this is also an active facility, no significant access or congestion problems are anticipated.

SUMMARY

Table 7 provides a summary of the total number of trailers in each category which were found at the six sites. Physical access onto each site was also noted during the visits. Each site was fenced. However, the snow fencing and unattended condition of the Red Devil site in Rosemont was considered to provide inadequate restriction of access. Locks for those trailers which were not secured at all the sites were also recommended by the State Police.

Troopers Koch and DeLacy provided a list of equipment they felt would be necessary for work at the sites. This list includes the following:

- o Front end loader
- o Heavy-duty tow truck
- o Lumber for repairs, plastic sheeting to cover trailers.
- o Welding crew for possible repair of frames
- o Three truck tractors (minimum) for movement of trailers
- o Spare tires and wheels
- o Two dump trucks with tarps to clean up possible spillage
- o Jacks and braces
- o Vac truck
- o Protective gear.

Two basic methods of deterioration were noted on those trailers assessed to be structurally unsound. The alkaline nature of the leachate has caused corrosion of the aluminum at the bottom seams at most of these units. Secondly, the wooden flooring in some units has rotted away. In some instances, holes have been made via each method which are large enough to expose the actual waste chips to the outisde. Tilting of a few of the trailers were noted, and many had bowed sides. The accumulation of snow on the tops of these units, or severe winds, was felt to pose a definite threat to the further maintenance of the structural soundness of those trailers. TAT recommends that an Immediate Removal Action be initiated to provide additional security and to repair or offload those trailers categorized as unsound. Those trailers which are leaking should be fitted with a leachate collection system (gutters or other devices). All the trailers should be covered with plastic sheets. Sheets of visquene can be dropped over the tops of the trailers. Then, small sections of 1 X 6 lumber can be screwed or bolted into

the tops of the trailer walls, (with the plastic sandwich between the wall and wood to secure the sheet). As the migration of contaminants off-site have been documented at both the McCook and Summit sites, the two facilities should be dealt with initially.

initially

Very truly yours,

Jeff Stofferahn
Project Scientist

John W. Thorsen
Technical Assistance Team
Leader, Region V

JS/ap
Attachments

TABLE 1

CATEGORIZATION OF FILM CHIP TRAILERS AT RED DEVIL MANUFACTURING, ROSEMNONT, ILLINOIS

Categories:
A - Structurally sound, not leaking
B - Structurally sound, leaking/seeping leachate
C - Structurally unsound, repairable
D - Structurally unsound, to be off-loaded

Trailer #	Category	Comments
1	B	Clear side door and seal
2	C	Patch front seam
3		No waste found inside
4	B	Locked
5	B	Clear rear door
6	C	Front seams corrosion
7	C	Repair back door
8	C	Clear doors and seal
9	C	Seam corrosion
10	B	Locked
11	C	Repair rear door
12	C	Repair rear door
13	D	Waste leakage through floor hole
14	C	Front seam corrosion
15	D	Front and sides leaking chips
16	C	Repair back door, side seams corrosion
17	B	Clear door of chips
18	D	Sides of leaking chips
19	C	Replace back door
20	C	Reinforce floor, front seam corrosion
21	B	Corroded seams
22	C	Seam corrosion, reinforce door
23	B	Clear door seams of chips
24	B	Clear door seams of chips
25	C	Reinforce floor, front side seam corrosion
26	C	Repair rear door
27	D	Chip leakage at doors
28	D	Chip leakage at doors
29	C	Reinforce floor, clear doors

Totals:

Category	Number of Trailers
A	0
B	8
C	15
D	5
	28

TABLE 2

CATEGORIZATION OF FILM CHIP TRAILERS AT ALDENS WAREHOUSE, CHICAGO, ILLINOIS

Categories:
A - Structurally sound, not leaking
B - Structurally sound, leaking/seeping leachate
C - Structurally unsound, repairable
D - Structurally unsound, to be off-loaded

Trailer #	Category	Comments
1	C	Repair floor
2	D	Chips leak at seams, sides bulging
3	D	Front bulging, seams leaking
4	B	Corrosion at door and seams
5	D	Floor and back door unstable, leaking chips
6	C	Repair floor
7	C	Repair floor
8	B	Clear back door
9	C	Front seam corrosion, reinforce back door
10	C	Seam corrosion, seal back door
11	D	Sides bulged, chips leaking at rear
12	C	Seam corrosion, clear rear door
13	B	Clear rear door
14	C	Repair rear door
15	C	Seam corrosion, replace rear door
16	C	Clear rear door, front seam corrosion
17	D	Hole in floor, sides corroded
18	C	Front seam corrosion seal rear
19	C	Seam corrosion
20	C	Seam corrosion
21	C	Seam corrosion
22	C	Seam corrosion
23	C	Seam corrosion
24	C	Seam corrosion
25	C	Seam corrosion
26	C	Seam corrosion
27	C	Seam corrosion
28	C	Seam corrosion
29	C	Seam corrosion
30	D	Sides bulging
31	C	Seam corrosion
32	D	Unstable sides and rear
33	D	Leakage of chips through side corrosion
34	D	Floor and sides unstable
35	D	Sides unstable

36	C	Rear seam corrosion
37	C	Seam corrosion

Totals:	Category	Number of Trailers
	A	0
	B	3
	C	24
	D	10
		37

TABLE 3

CATEGORIZATION OF FILM CHIP TRAILERS AT
GEMINI LEASING YARD, HODGKINS, ILLINOIS

Categories:
A - Structurally sound, not leaking
B - Structurally sound, leaking/seeping leachate
C - Structurally unsound, repairable
D - Structurally unsound, to be off-loaded.

Trailer #	Category	Comments
1	B	Leaking at front
2	B	Leaking at front
3	B	Leaking at front
4	C	Repair side door, sides bowed
5	C	Side door sprung, leaking
6	B	Leaking - floor rotting
7	A	
8	C	Floor rotting, sides sprung from frame
9	C	Side walls sprung, seam corrosion
10	C	Seam corrosion
11	D	Holes in side, floor rotting
12	D	Holes in side, floor near collapse
13	C	Side seam corrosion, floor leakage
14	D	Side corrosion, floor leakage
15	C	Side walls sprung, leaking
16	C	Side corrosion, leaking
17	D	Side corrosion, leaking
18	C	Front seam corrosion, leaking
19	D	Side corrosion, leaking
20	B	
21	C	Minimal side corrosion, leaking
22	D	Top damaged, side walls sprung, leaking
23	D	Side walls sprung, front and side seam corrosion
24	C	Front seam corrosion, leaking
25	D	Floor buckled, sides bowed, leaking
26	D	Side corrosion, leaking

Totals:

Category	Number of Units
A	1
B	5
C	11
D	9
	26

TABLE 4

CATEGORIZATION OF FILM CHIP TRAILERS AT J'S MOBILE SEMI-TRAILER REPAIR, McCOOK, ILLINOIS

Categories: A - *Structurally sound, not leaking*
B - Structurally sound, leaking/seeping leachate
C - Structurally unsound, repairable
D - Structurally unsound, to be off-loaded

Trailer #	Category	Comments
1	D	Rear door missing, side and front corrosion
2	C	Possible frame damage, side corrosion
3	D	Floor in very bad condition
4	B	Floor leakage
5	C	Rear seam corrosion
6	D	Much floor rotting
7	D	Floor buckled, considerable seam corrosion
8	C	Right side corrosion, clear rear door
9	C	Front and left side corrosion
10	C	Cross member in floor bowed and twisted, side corrosion
11	B	Leaking at rear door
12	C	Side corrosion
13	C	Side corrosion
14	A	

Totals:

Category	Number of Trailers
A	1
B	2
C	7
D	4
	14

TABLE 5

CATEGORIZATION OF FILM CHIP TRAILERS AT EAGLE TRAILERS, SUMMIT, ILLINOIS

Categories:
A - Structurally sound, not leaking
B - Structurally sound, leaking/seeping leachate
C - Structurally unsound, repairable
D - Structurally unsound, to be off-loaded

Trailer #	Category	Comments
1	B	
2	D	Side corrosion
3	B	
4	D	Side corrosion
5	B	
6	B	
7	B	
8	C	Side corrosion
9	B	Leaking side door
10	B	Leaking side door
11	B	Leaking floor
12	B	Leaking side door
13	B	Leaking floor
14	B	Leaking sides
15	B	
16	D	Side seam corrosion, side door sprung
17	B	Leaking sides
18	B	Leaking front
19	C	Front upright brace cracked, front seam corrosion
20	B	Leaking side
21	A	
22	B	Leaking floor
23	B	
24	A	
25	A	
26	B	Leaking side
27	B	Leaking floor

Totals:

Category	Number of Trailers
A	3
B	19
C	2
D	3
	27

TABLE 6

CATEGORIZATION OF FILM CHIP TRAILERS AT LIVCO, INC.,
CHICAGO RIDGE, ILLINOIS

Categories:
A - Structurally sound, not leaking
B - Structurally sound, leaking/seeping leachate
C - Structurally unsound, repairable
D - Structurally unsound, to be off-loaded

Trailer #	Category	Comments
1	B	
2	B	Leaking floor
3	B	Leaking floor
4	B	Leaking floor, front seam
5	D	Side seam corrosion, possible collapse
6	B	Front seam corrosion
7	B	Leaking floor
8	B	Leaking floor
9	B	Leaking floor
10	B	Leaking floor
11	B	Leaking floor
12	B	Front seam corrosion
13	B	Leaking floor
14	B	Leaking floor
15	C	Front seam corrosion, possible collapse
16	B	Leaking floor
17	B	Leaking floor, front seam corrosion
18	B	Leaking floor, side seam corrosion

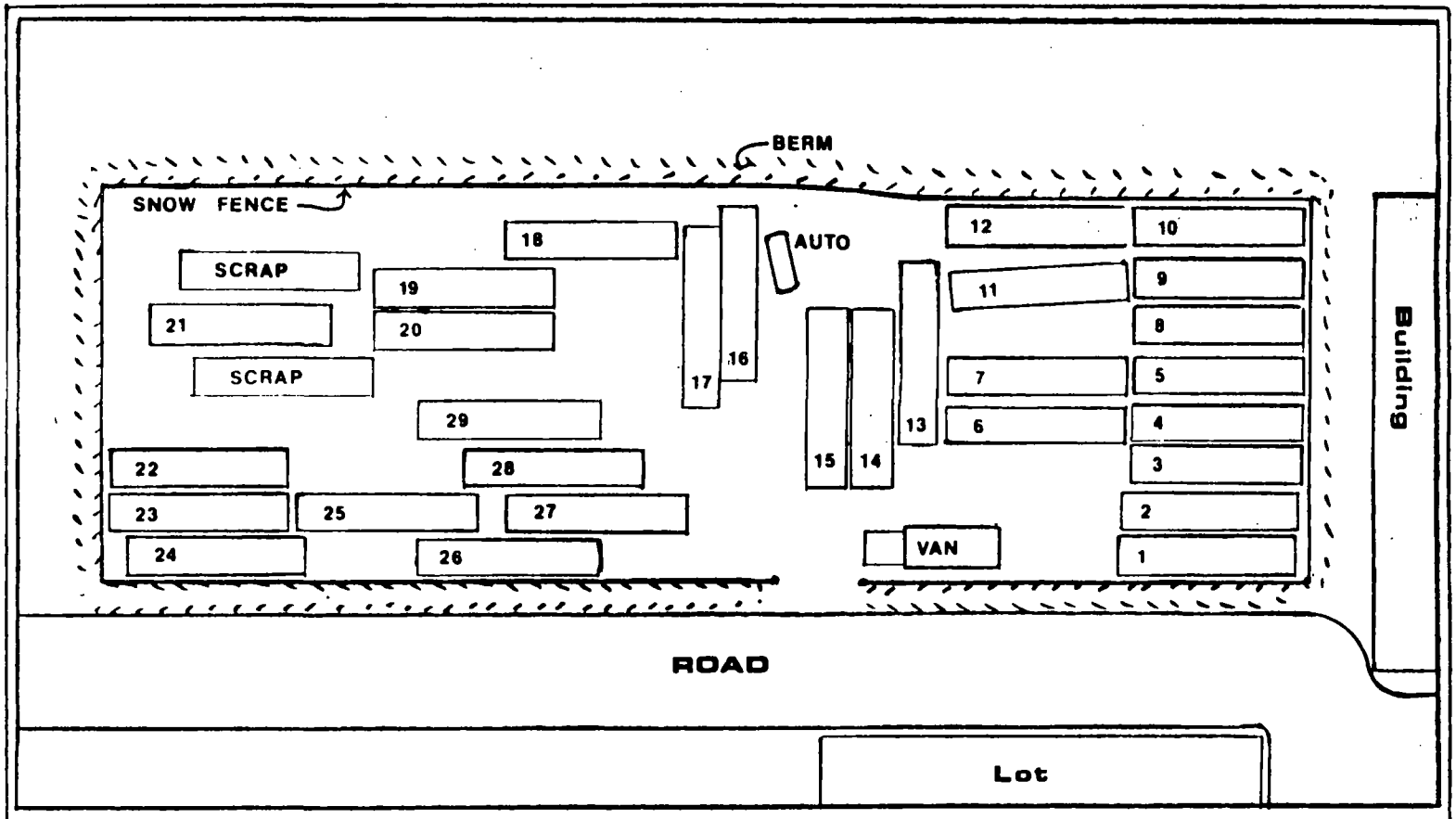
Totals:

Category	Number of Trailers
A	0
B	16
C	1
D	1
	18

TABLE 7

SUMMARY OF TRAILER ASSESSMENT BY ILLINOIS STATE POLICE AND TAT

Category	Total Number of Trailers
A	5
B	53
C	60
D	32
	150
	27
	123



RED DEVIL MANUFACTURING

5995 NORTH RIVER ROAD

ROSEMONT, IL.

APPROXIMATE SCALE:

Feet

0 25 50

N

ROY F. WESTON, INC.

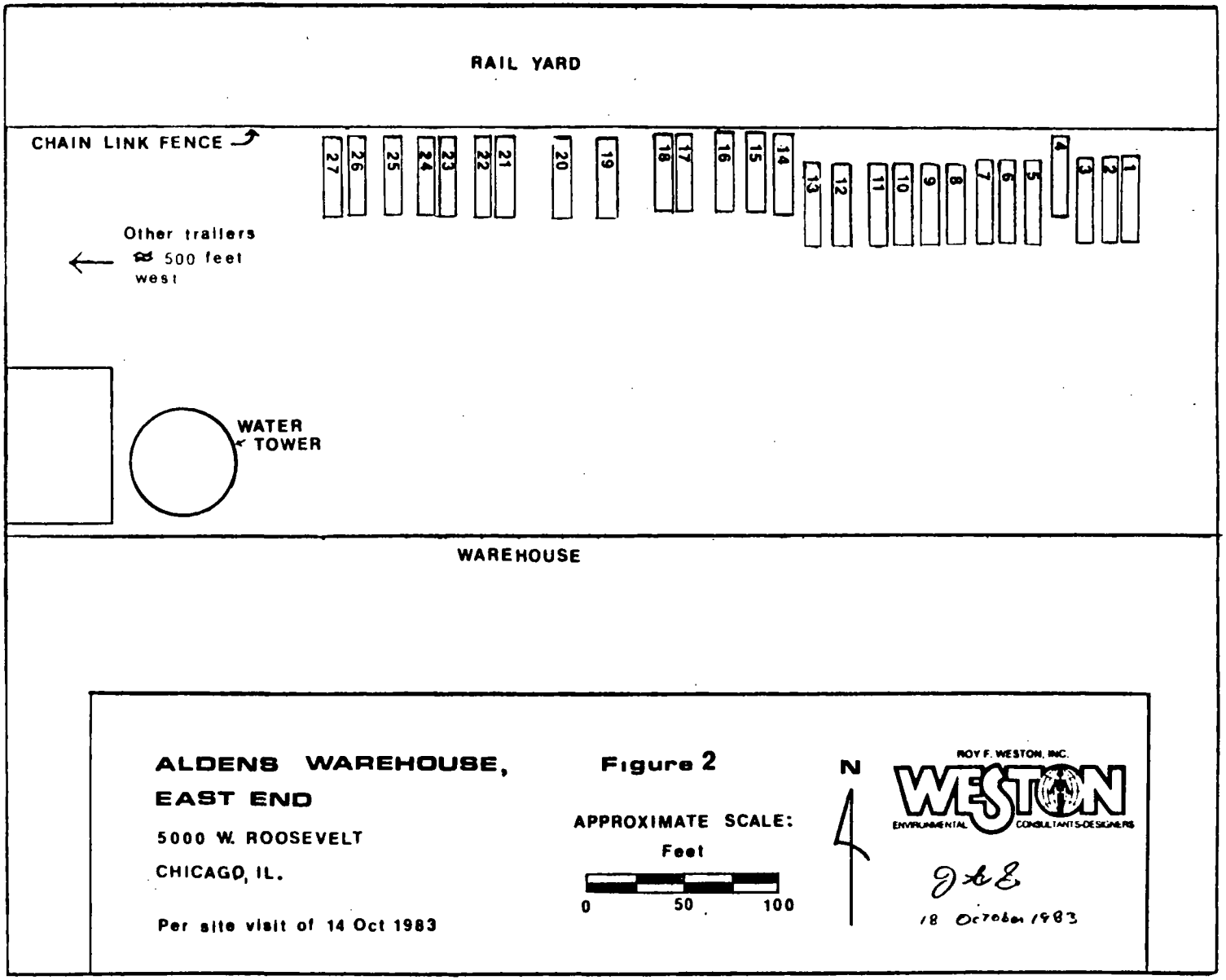
WESTON

ENVIRONMENTAL CONSULTANTS & DESIGNERS

Figure 1

Per site visit of 14 Oct 1983

18 October 1983



ALDENS WAREHOUSE,
EAST END

5000 W. ROOSEVELT

CHICAGO, IL.

Per site visit of 14 Oct 1983

Figure 2

APPROXIMATE SCALE:

Feet

0 50 100

N

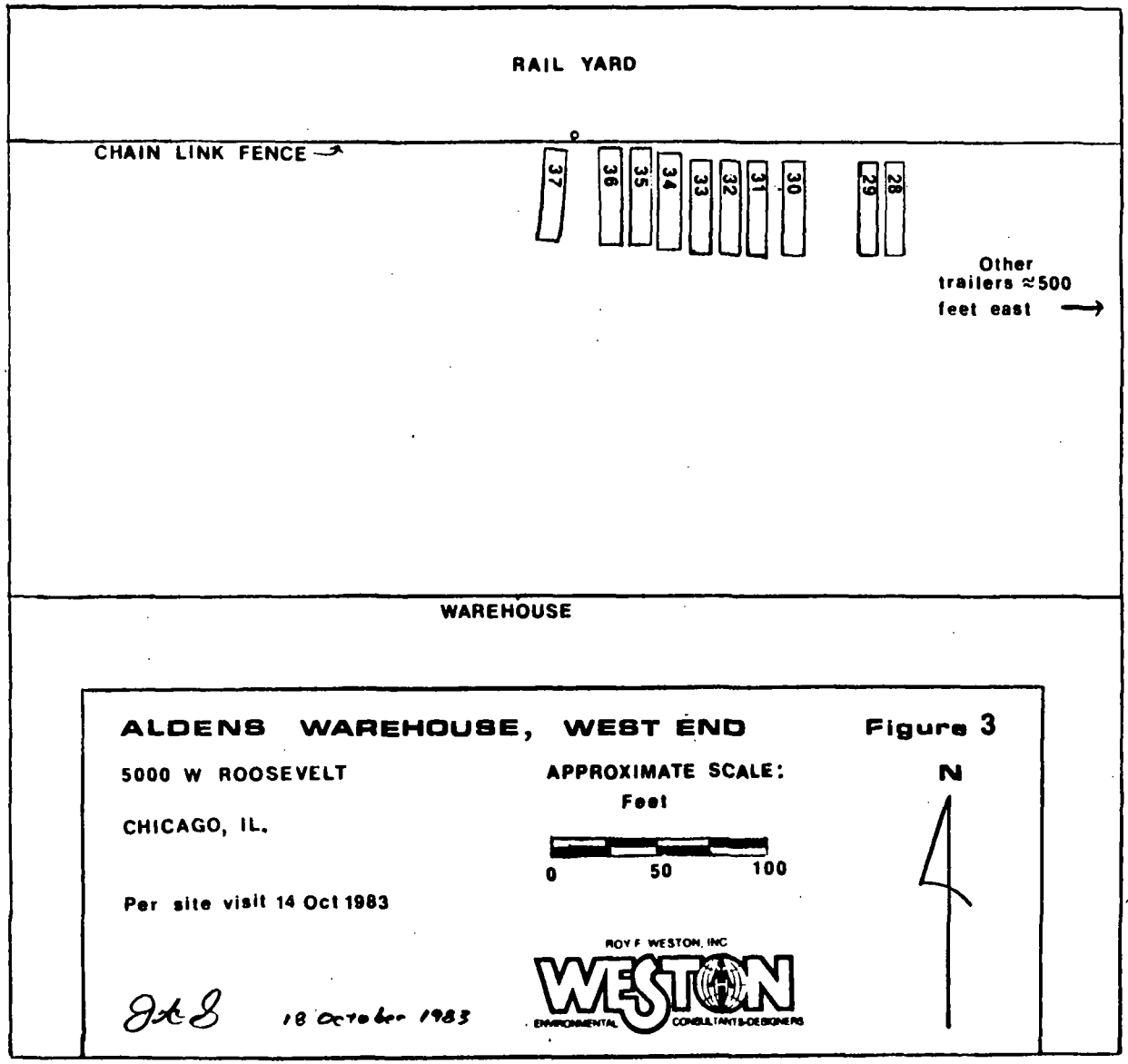
ROY F. WESTON, INC.

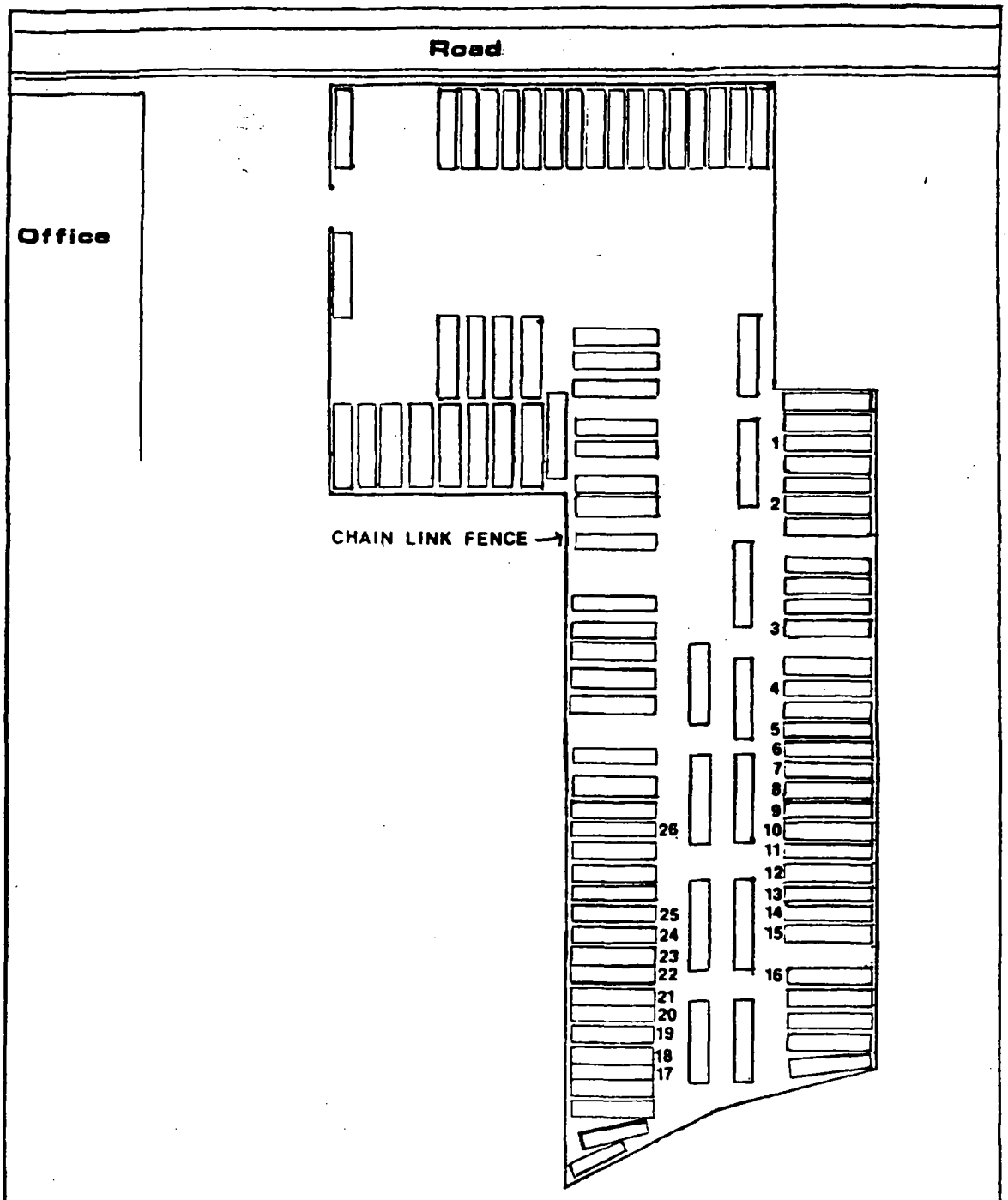
WESTON

ENVIRONMENTAL CONSULTANTS-DESIGNERS

D & E

18 October 1983


RAIL YARD
CHAIN LINK FENCE
37
36
35
34
33
32
31
30
29
28
Other trailers ≈500 feet east
WAREHOUSE
ALDENS WAREHOUSE, WEST END
Figure 3
5000 W ROOSEVELT
CHICAGO, IL.
APPROXIMATE SCALE:
Feet
0
50
100
N
Per site visit 14 Oct 1983
JLS 18 October 1983
ROY F. WESTON, INC
WESTON
ENVIRONMENTAL CONSULTANTS & DESIGNERS



GEMINI LEASING (RITE-WAY) **Figure 4**

6201 SOUTH EAST AVE.
HODGKINS, IL.

APPROXIMATE SCALE:

FEET

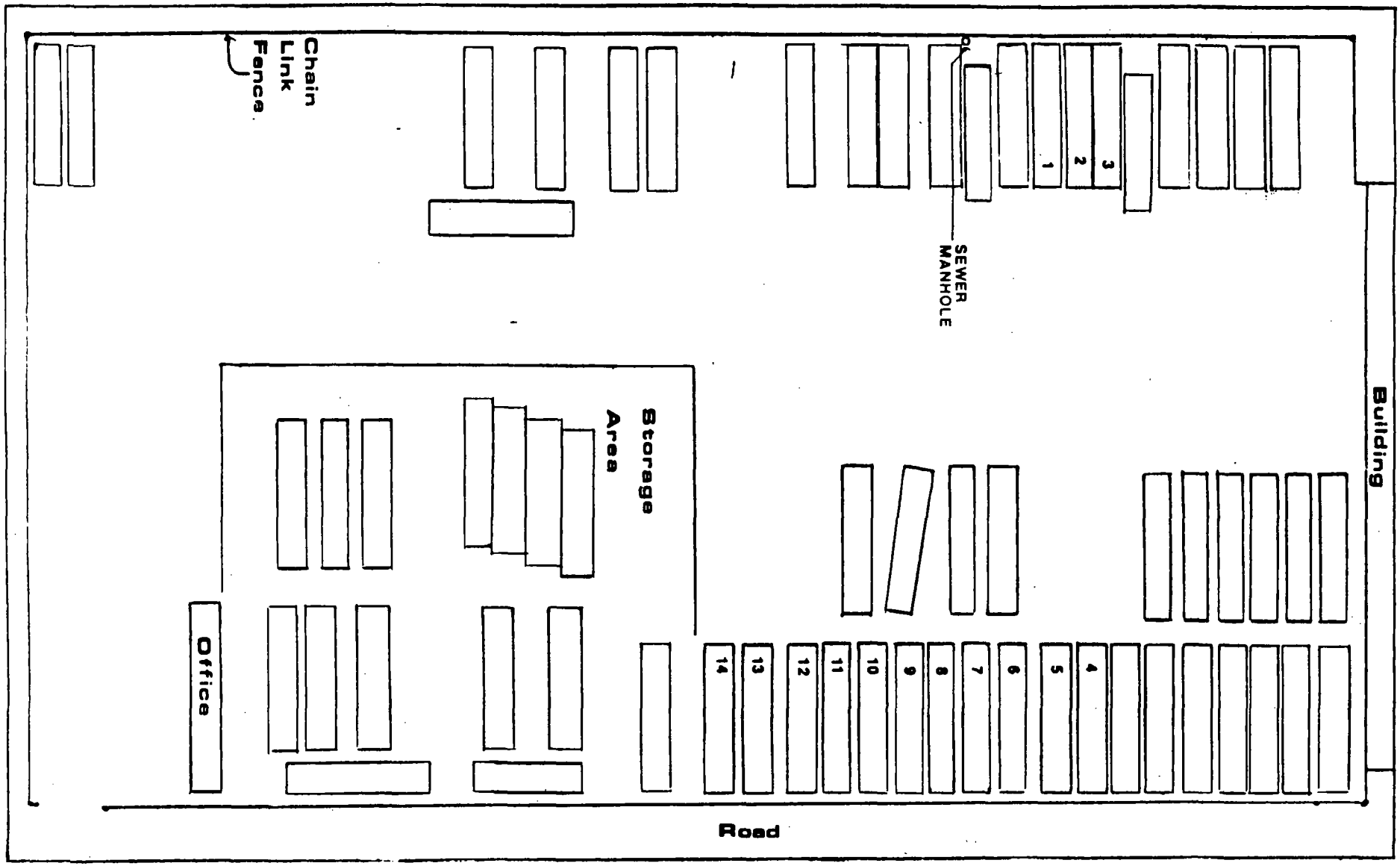
0 50 100

N

ROY F. WESTON, INC.
WESTON
ENVIRONMENTAL CONSULTANTS-DESIGNERS

Per site visit of 17 Oct 1983

19 October 1983



J's MOBILE SEMI-TRAILER REPAIR

8765 W. JOLIET ROAD

McCOOK, IL.

Per site visit of 17 Oct 1983

Figure 5

N

APPROXIMATE SCALE:

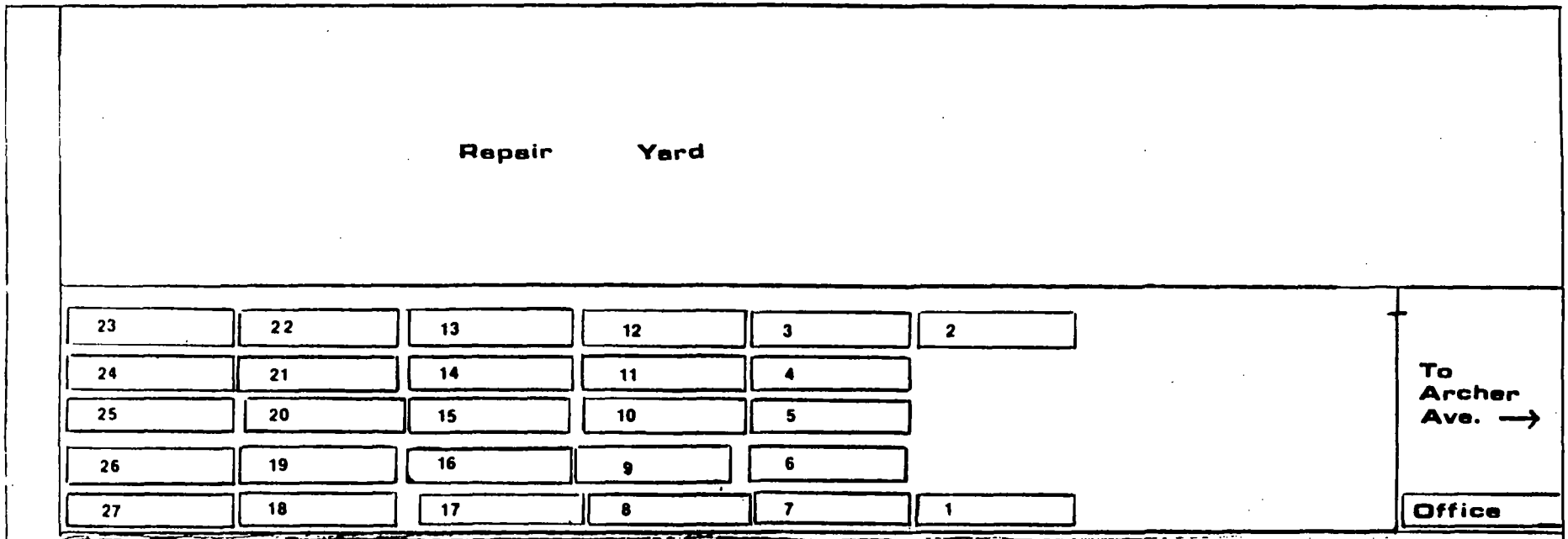
FEET

0 25 50

ROY F. WESTON, INC.

WESTON ENVIRONMENTAL CONSULTANTS-DESIGNERS

JA 8 19 October 1983



EAGLE TRAILER INC. **Figure 6**

7710 W. 57th STREET

SUMMIT, IL.

Per site visit of 17 Oct 1983

APPROXIMATE SCALE:

Feet

0 25 50

N

ROY F. WESTON, INC

WESTON

ENVIRONMENTAL CONSULTANTS-DESIGNERS

JLB 20 October 1983